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Yields of the Field Experiments 2015

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R/CS/326 & W/CS/326 Amounts of Straw

Rothamsted Research

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15/R/CS/326 and 15/W/CS/326

AMOUNTS OF STRAW

Object: To study the effects of different amounts of straw, incorporated into the soil, on w. wheat – Rothamsted (R) Great Knott III, Woburn (W) Far Field I
Sponsors: A Macdonald and M. J. Glendining,

The 29th and final year, w. wheat.

Notes: Both experiments will finish in autumn 2017. No yields will be taken in 2016 or 2017. For previous years see Yield Books for 87-14/R & W/CS/326.

Design: 4 randomised blocks of 4 plots (R)
3 randomised blocks of 4 plots (W)

Whole plot dimensions: 3.0 x 13.5 (R). 0.004 ha
3.0 x 14.5 (W).

Treatments:

STRAW Amounts of straw incorporated into the seedbed (t/ha), cumulative to previous annual dressings:

		R	W
NONE	None	-	-
NORMAL	Normal	5.72	4.40
2 NORMAL	Twice normal	11.44	8.80
4 NORMAL	Four times normal	22.88	17.60

Experimental Diary

Great Knott III (R)

Date		Application	Rate	Units
11/09/2014	a	Loaded Straw by hand onto plots 4, 7, 11, 14	See above	
11/09/2014	a	Loaded Straw by hand onto plots 2, 6, 10, 13	See above	
11/09/2014	a	Loaded Straw by hand onto plots 3, 5, 9, 16	See above	
01/10/2014	s	Drilled Crusoe trt Redigo Deter	325	seeds/m^2
03/10/2014	p	Sprayed Liberator	0.6	l/ha
03/10/2014	p	Sprayed Anthem	2.4	l/ha
29/10/2014	p	Applied TDS Major Slug Pellets	5	kg/ha
25/11/2014	p	Sprayed Hallmark + Pixie	50	ml/ha
25/11/2014	p	Sprayed Hallmark + Pixie	1.25	l/ha
12/03/2015	f	Applied DoubleTop (27 %N) Fertilizer	148	kg/ha
23/03/2015	p	Sprayed Chex onto Winter Wheat	250	ml/ha
23/03/2015	p	Sprayed Pacifica onto Winter Wheat	500	ml/ha
23/03/2015	p	Sprayed Bio Power onto Winter Wheat	1	l/ha
27/03/2015	p	Sprayed Artemis	1	l/ha
27/03/2015	p	Sprayed Bravo 500	1	l/ha
27/03/2015	p	Sprayed BASF 3C, Chlormequat 750	1.25	l/ha
27/03/2015	p	Sprayed Moddus	150	ml/ha
31/03/2015	f	Applied Nitram (34.5 %N) Fertiliser to Winter Wheat	262	kg/ha
22/04/2015	p	Sprayed Kingdom	1.25	kg/ha
22/04/2015	p	Sprayed Balear720	700	kg/ha
30/04/2015	f	Applied Nitram (34.5 %N)	26	kg/ha
22/05/2015	p	Sprayed Ally Max	30	gm/ha
22/05/2015	p	Sprayed Bassoon	750	ml/ha

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22/05/2015	p	Sprayed Envoy	750	ml/ha
22/05/2015	p	Sprayed Bravo500	1	l/ha
12/06/2015	p	Sprayed Cello	550	ml/ha
04/08/2015	a	Harvested surrounds of trial area - Swathed Straw, ready to be removed.	-	-
05/08/2015	a	Harvested all plots for yield - Sampo - Swathed Straw to be baled	-	-
05/08/2015	a	Sampled, Baled and Weighed all plots on trial - conventional baled.	-	-
05/08/2015	a	Loaded Straw onto plots 4, 7, 11, 14	17.87	kg/ha
05/08/2015	a	Loaded Straw onto plots 2, 6, 10, 13	35.74	kg/ha
05/08/2015	a	Loaded Straw onto plots 3, 5, 9, 16	71.4	kg/ha
05/08/2015	a	Topped all plots with topper 9 to condition straw for ploughing	-	-

Far Field I (W)

Date		Application	Rate	Unit
20/10/2014	a	Ploughed (thrown east)	-	-
27/10/2014	a	Spring tined	-	-
28/10/2014	s	Drilled Crusoe trt Redigo Deter	400	seeds/m^2
28/10/2014	a	Rolled		
25/11/2014	p	Sprayed Hallmark in 200 l/ha water volume	50	ml/ha
25/11/2014	p	Sprayed Movon in 200 l/ha water volume	0.35	l/ha
25/11/2014	p	Sprayed Sienna in 200 l/ha water volume	2	l/ha
26/03/2015	f	Applied Double Top Fertilizer (27% N)	148	kg/ha
07/04/2015	p	Sprayed Chex in 200 l/ha water volume	0.25	l/ha
07/04/2015	p	Sprayed Pacifica in 200 l/ha water volume	5	l/ha
07/04/2015	p	Sprayed Bio Power in 200lt/ha water volume	1	l/ha
13/04/2015	p	Sprayed Artemis in 131 l/ha water volume	1	l/ha
13/04/2015	p	Sprayed Bravo 500 in 131 l/ha water volume	1	l/ha
13/04/2015	p	Sprayed BASF 3C, Chlormequat 750 in 131 l/ha water volume	1.25	l/ha
13/04/2015	p	Sprayed Moddus in 131 l/ha water volume	0.15	l/ha
13/04/2015	p	Sprayed Sprinter in 131 l/ha water volume	2	l/ha
14/04/2015	f	Applied Nitram (34.5% N)	203	kg/ha
01/05/2015	f	Applied Nitram (34.5% N)	203	kg/ha
11/05/2015	p	Sprayed Cello	0.9	l/ha
11/05/2015	p	Sprayed Balear 720 in 131 l/ha water volume	0.7	l/ha
20/05/2015	a	Cut paths		
30/05/2015	p	Sprayed Bassoon in 131 l/ha water volume	0.75	l/ha
30/05/2015	p	Sprayed Envoy in 131 l/ha water volume	0.75	l/ha
30/05/2015	p	Sprayed Crescent in 131 l/ha water volume	0.75	l/ha
11/09/2015	a	Combined plots for yield	-	-
28/09/2015	a	Straw weights + loaded	-	-

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15/R/CS/326

```
GRAIN TONNES/HECTARE

***** Tables of means *****

       Straw_
           -      10.58
           1      10.92
           2      10.76
           4      11.29

        Mean      10.89

Standard errors of differences of means
---------------------------------------
Table               Straw_
rep.                     4
d.f.                     9
s.e.d.               0.135

Stratum standard errors and coefficients of variation
=====================================================

Variate: Grain85% Grain (at 85% dry matter) tonnes/hectare

Stratum                  d.f.          s.e.         cv%

Blocks                      3         0.123         1.1
Blocks.Plots                9         0.191         1.8

Grain mean DM% 87.2

STRAW TONNES/HECTARE

***** Tables of means *****

            Straw_
           -      6.32
           1      6.46
           2      6.60
           4      7.02

        Mean      6.60

Standard errors of differences of means
---------------------------------------

Table               Straw_
rep.                     4
d.f.                     9
s.e.d.               0.153

Stratum standard errors and coefficients of variation
=====================================================

Variate: Straw85% Straw (at 85% dry matter) tonnes/hectare

Stratum                  d.f.          s.e.         cv%

Blocks                      3         0.122         1.9
Blocks.Plots                9         0.217         3.3


 Straw mean DM% 85.7


Plot area harvested 0.00284
```


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15/W/CS/326

```
GRAIN TONNES/HECTARE

***** Tables of means *****

       Straw_
           -      8.07
           1      8.33
           2      7.50
           4      6.78

         Mean      7.67

Standard errors of differences of means
---------------------------------------
Table               Straw_
rep.                     3
d.f.                     6
s.e.d.               0.393

Stratum standard errors and coefficients of variation
=====================================================

Variate: Grain85% Grain (at 85% dry matter) tonnes/hectare

Stratum                   d.f.          s.e.         cv%

Blocks                       2         1.126        14.7
Blocks.Plots                 6         0.481         6.3

Grain mean DM% 86.5

STRAW TONNES/HECTARE

***** Tables of means *****

        Straw_
           -      3.70
           1      3.99
           2      3.91
           4      4.10

         Mean      3.92

Standard errors of differences of means
---------------------------------------
Table               Straw_
rep.                     3
d.f.                     6
s.e.d.               0.371

Stratum standard errors and coefficients of variation
=====================================================

Variate: Straw85% Straw (at 85% dry matter) tonnes/hectare

Stratum                   d.f.          s.e.         cv%

Blocks                       2         0.919        23.4
Blocks.Plots                 6         0.455        11.6


Straw mean DM% 89.7


Plot area harvested 0.00305
```


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